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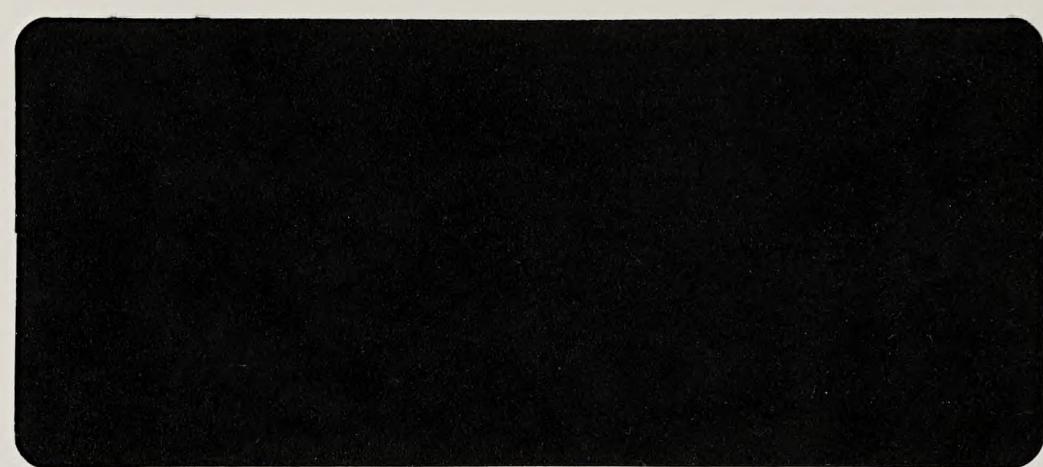
Community Facilities Plan: 1981-2000

City of Rockingham, North Carolina

July, 1981

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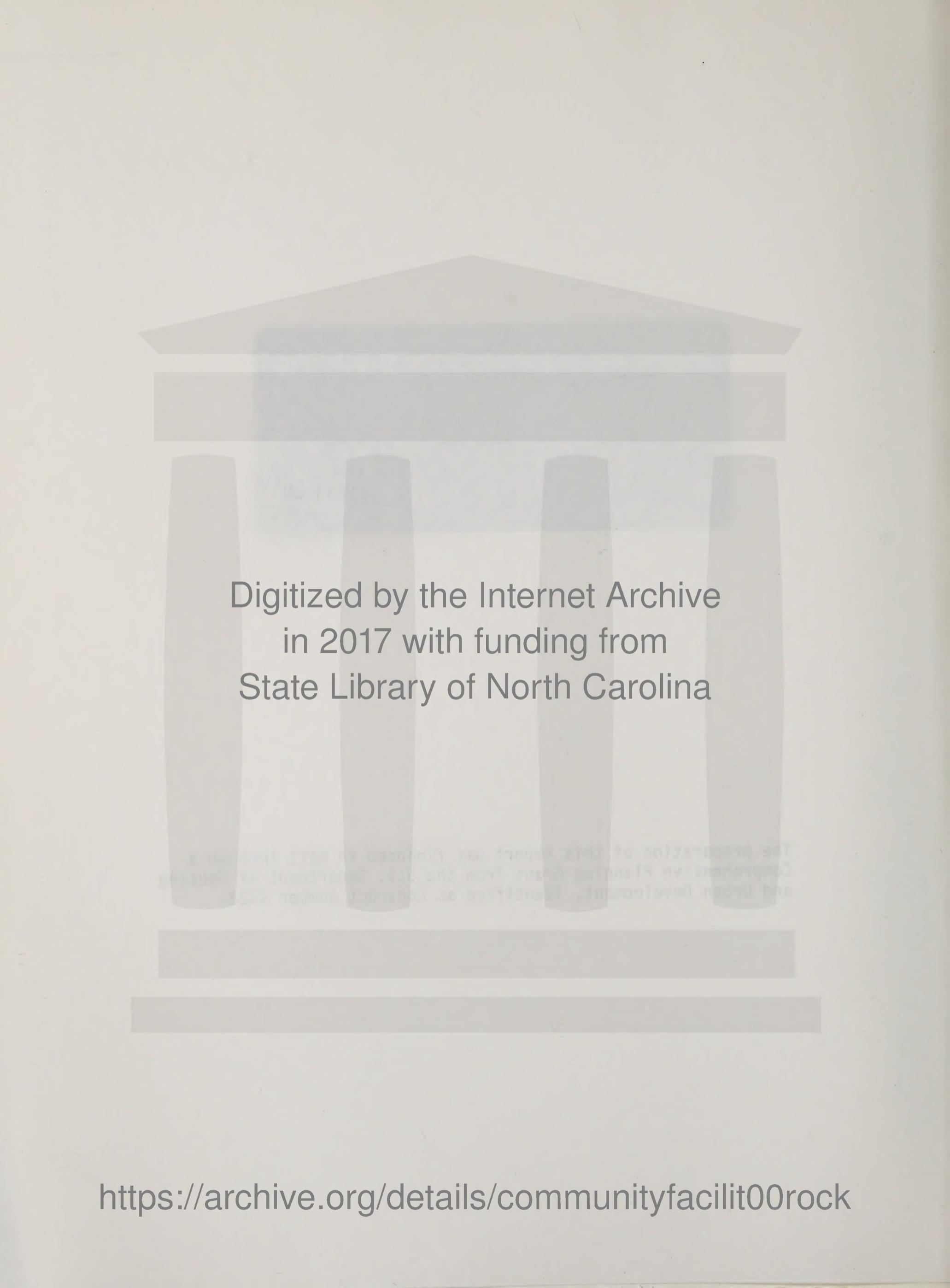
Community Facilities Plan: 1981-2000

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SUMMARY OF RECOMMENDATIONS

PUBLIC WORKS

Water Treatment and Distribution

Short Range (5 Years):

1. Encourage Richmond County participation in Rockingham's treated water service.
2. Establish Roberdel Lake as the primary water source.
3. Study groundwater resources feasibility.
4. Increase treatment capacity to 3.5 mgd (5.0 mgd with County participation).
5. Increase storage capacity to 1.6 mg (2.0 mg with County participation).
6. Increase water pressure so that 65-70 pounds is available at all points on the system.
7. Replace distribution lines downtown to 8 inches along all streets.
8. Replace undersized distribution lines in surrounding mill villages.
9. Systematically replace vehicles and equipment as needed through capital improvements programming.
10. Initiate a water study program, to be reviewed every two years, to determine water system needs.

Long Range (20 Years):

1. Increase treatment capacity to 5.0 mgd (15 mgd with County participation).
2. Increase storage capacity to 2.0 mg (6 mg with County participation).
3. Continue No. 9 and No. 10 above.

Sanitary Sewerage

Short Range (5 Years):

1. Continue plans to upgrade the sewage treatment and collection systems as per federal and state regulations.
2. Conduct periodic studies to prevent surface water inflow and groundwater infiltration into the sanitary system and take required action.
3. Replace undersized and deteriorated collection lines.
4. Systematically replace vehicles and equipment through capital improvements programming.

Long Range (20 Years):

1. Continue short range recommendations in a systematic manner.

Storm Drainage

Short Range (5 Years):

1. Make review of drainage proposals a high priority when approving development plans (subdivision regulations).
2. Begin an organized and systematic program of drainage maintenance including:
 - storm drain clean-out,
 - improved street sweeping,
 - stream channel maintenance,
 - stream channel debris removed,
 - culvert cleaning, and
 - removal of sediment deposits.
3. Initiate a study to locate undersized drains/culverts.
4. Strictly enforce erosion and sedimentation regulations.
5. Study the feasibility of requiring retention and/or sanitary disposal of runoff which has a high pollution potential.
6. Begin a systematic improvement of inadequate storm drains through capital programming.

Storm Drainage (Continued)

Long Range (20 Years):

1. Continue the above short range programs.
2. Study the feasibility of making storm drainage a public utility to manage the system and to be financed by property service charges.

Solid Waste

Short Range (5 Years):

1. Study the feasibility of curb side residential garbage pick up and test on a trial basis.
2. Require new high density residential areas to use container garbage systems (zoning, subdivision regulations).
3. Study the feasibility of charging fees for solid waste collection so that generators of waste pay proportionately for this service.
4. Test the feasibility of leaf/grass clipping bags for curb side collection.
5. Help the County locate and acquire a suitable sanitary landfill site.
6. Systematically upgrade and replace vehicles and equipment through capital improvements programming.

Long Range (20 Years):

1. Study the feasibility of recycling solid wastes and mass burning of organic matter for energy generation.
2. Study the feasibility of creating a self-supporting solid waste collection system through service fees and recycling.
3. Continue capital improvements programming.

Street Maintenance

Short Range (5 Years):

1. Pave all remaining dirt roads.
2. Identify all public alleys and determine if they should be maintained or closed.

Street Maintenance (Continued)

PUBLIC SAFETY

Short Range (5 Years):

3. Require curbs and gutters in all new developments.
4. Begin a program to systematically replace deteriorated sidewalks.
5. Identify streets requiring repaving (recycling) and put into the capital improvements program.
6. Require the state DOT to formally notify the City of all related street improvements under consideration.
7. Utilize capital improvements programming to systematically replace/upgrade vehicles and equipment.

Long Range (20 Years):

Long Range (20 Years):

1. Continue programs initiated above so that the City can anticipate major streets expenditures.

Cemeteries

Short Range (5 Years):

1. Survey and map additional space at Northside Cemetery.
2. Begin a "landscaping rejuvenation program" at Eastside Cemetery.
3. Develop a method to better identify burial sites.
4. Repave driveways in annual phases.
5. Utilize capital improvements programming to finance the above projects.

Long Range (20 Years):

1. Survey and acquire sufficient burial space to always be 20 years ahead the actual need.
2. Continue capital improvements programming to maintain grounds in pristine condition.

PUBLIC SAFETY

Police Protection

Short Range (5 Years):

1. Immediately eliminate the existing personnel shortages.
2. Upgrade the communications center.
3. Systematically replace vehicles and equipment, and schedule additional needs through capital improvements programming.

Long Range (20 Years):

1. Locate and acquire a new station facility.
2. Continue capital improvements programming to ascertain when additional personnel and equipment will be needed.

Fire Protection

Short Range (5 Years):

1. Delineate jurisdictional areas for all area fire departments.
2. Acquire a hook and ladder facility.
3. Study feasibility of closing Fire Station #2.
4. Study improvements/accessibility to Fire Station #1.
5. Plan for the need and financing of additional needs through capital improvements programming.

Long Range (20 Years):

1. Study the feasibility of a new station between Rockingham and Hamlet, perhaps supported by both cities.
2. Systematically increase the firefighting force as the service area expands.
3. Continue to replace/add equipment through capital improvements programming.

Civil Preparedness

Short Range (5 Years):

1. Formulate and test emergency preparedness plans to cover all anticipated situations, in conjunction with Richmond County.
2. Identify and equip emergency shelters, including fallout shelters.
3. Utilize capital improvements programming to finance these activities.

Long Range (20 Years):

1. Continue short range strategies. Update plans and upgrade facilities as new technologies become available.

5. Develop a bicycle plan.

6. Develop/improve bikeways with the highest priority being where the safety factors are greatest.

Long Range (20 Years):

1. Help provide a complete system of neighborhood parks, located so that only 10 minutes can walk to a recreation area.
2. Develop plans for an Interpretive center at Great Falls Mill.
3. Develop a Buckingham library system.

RECREATION

Historic Resources and Bikeways

Short Range (5 Years):

1. Conduct neighborhood studies to determine recreational needs.
2. Provide funds to help establish one neighborhood park every two years until the determined need is met.
3. Determine economic feasibility of creating a recreational interpretive center at the Great Falls Mill.
4. Pursue the establishment of an historic district information center/museum.
5. Develop a bikeways plan.
6. Construct/designate bikeways with the highest priority being where the safety hazard is greatest.

Long Range (20 Years):

1. Help provide a complete system of neighborhood parks, located so that all citizens can walk to a recreation area.
2. Implement plans for an interpretive center at Great Falls Mill.
3. Complete a Rockingham bikeways system.

OTHER COMMUNITY FACILITIES

Municipal Building and Library

Short Range (5 Years):

1. Locate suitable site for a new municipal building.
2. Begin design work on a new municipal building after determining future space needs.
3. Acquire clear title to a new library site.
4. Complete design plans for a new library.
5. Initiate fund raising measures for these facilities.

Long Range (20 Years):

1. Construct or renovate and open a new municipal building.
2. Construct and open a new library facility.

This report is based upon present knowledge of local governmental

authorities, business leaders, consulting engineers, and related parties,

which have been given an informed planning and future plans. Existing

conditions and services are analyzed to establish normal national

standards, existing levels of service and capabilities for the future

more than justified. As a result of these findings, certain costs and

difficulties were uncovered and recommendations for the consideration

ROCKINGHAM

COMMUNITY FACILITIES PLAN

In 1980 Rockingham had 8,300 citizens living in 3,230 households, and about double that within the extraterritorial planning jurisdiction. By the year 2000, the City is projected to have approximately 15,000 citizens with another 10,000 within its extraterritorial jurisdiction. Growth of this magnitude requires the City to plan for expansion of its community facilities in order to meet the demands of a growing population.

This report details the extent, adequacy, and importance of each public service facility in the City of Rockingham. It is a plan for the future best ordering of each facility through the year 2000. The year 2000 is not a target date for a static occurrence but rather a date attached to make this plan more comprehensible and to put its goals into perspective. This time span is sufficient for most of the recommendations of this report to be carried out.

Methodology

This report is based upon personal interviews with local governmental officials, department heads, consulting engineers, and related parties, obtaining from them data on existing functions and future plans. Existing facilities and services are analyzed in terms of accepted local and national standards. Existing levels of service and capabilities for the future were then compiled. As a result of these inventories, certain needs and deficiencies were uncovered and recommendations for their rectification are made.

Some recommendations are made concerning facilities that are presently

inadequate for the existing population. Other recommendations are made concerning facilities that will need expanding to accommodate anticipated population growth.

Goals and Objectives

The three fundamental goals of this plan are: (1) to protect and increase area property values by rendering the land use pattern more logical and efficient; and (2) to determine well in advance necessary capital improvements; and (3) to enhance the City's livability.

The study has the following objectives:

- a) to provide basic information on the nature, condition and extent of public facilities in Rockingham for the benefit and convenience of the citizenry, government officials, business leaders, and prospective industries;
- b) to publicize the policies which govern the operation of city-wide facilities, taking note of future plans for improvement and/or expansion;
- c) to recommend needed public improvements through a systematic plan for the future development of all public facilities;
- d) to indicate areas of future concern regarding public facilities, especially regarding the relationship between facilities and changes (social, economic, and physical) expected to affect this community; and,
- e) to emphasize the significant part that adequate public facilities can have in helping to make Rockingham a fine place in which to live and do business.

PUBLIC WORKS

The Public Works Department includes six divisions which comprise the majority of community facility needs in Rockingham. Safe and efficient public works operations make Rockingham a clean, sanitary, and decent place to live. Short and long range needs of the water, sewer, storm drainage, solid waste, streets, and cemeteries functions are detailed below. The Rockingham water treatment and distribution system is at capacity and in a critical situation. The section below on water needs is more lengthy than other sections, reflecting the severity of the problem.

Water Treatment and Distribution

Raw water for the City of Rockingham is available from Falling and Hitchcock creeks, and is treated and distributed through a municipally owned system. Since its purchase in 1920 from private ownership, the potable water system has expanded to include 3,750 customers using an average 1.9 million gallons per day in 1980. Treated water is available to all parts of the City, as well as several areas beyond the municipal boundaries. The City system is interconnected with the Richmond County Water System and is presently supplying some of the County demand.

Source

The primary raw water source is the 28 acre City Lake on Falling Creek. Falling Creek has a 20 square mile drainage basin, with a dependable low water flow of 1.25 million gallons per day. A gravity 18 inch line feeds this raw water to treatment plant.

Roberdel Lake provides an auxillary water source for the City. This

125 acre lake is on Hitchcock Creek, which has a ten year low flow of 20 million gallons per day. The existing raw water pump and 10 inch line can deliver 1.8 million gallons per day to the treatment plant.

Additional raw water can be supplied by a pump on Falling Creek at the treatment plant below City Lake. This is a secondary source, and is used primarily to meet peak industrial demands.

Projected Demand

The City of Rockingham has a projected potable water need of 3.5 million gallons per day by 1985, and 5 million gallons per day by the year 2000. Richmond County anticipated a total combined need of over 20 million gallons per day by the year 2000.

Treatment and Storage

The treatment plant uses a sedimentation and rapid-sand filtration system, with a present capacity for 2.5 million per day. The 1980 average daily production was 1.9 million gallons, for approximately 150 gallons per capita per day. Maximum daily production has exceeded 2.45 million gallons. One major industry averages 290,000 gallons per day.

The existing treatment plant capacity can be increased to 3.0 million gallons per day with minor modifications. This increase will supply Rockingham's projected average daily demand through 1985, but not the expected peak demand.

Rockingham has a finished water storage capacity of 1,175,000 gallons; 800,000 gallons ground storage and 375,000 gallons elevated in two towers. The elevated storage provides 65-75 pounds per square inch pressure at most locations. The present average water demand of 1.9 million gallons

per day means that the elevated storage tanks must be replenished over five times daily. For fire protection, pressure of 70 pounds is recommended by the Fire Insurance Commission. Low water pressure complaints are common in areas with high elevations in and around Forest Hills where static pressure has been measured at less than 40 pounds per square inch.

Distribution

Rockingham's treated water distribution system comprises up to 12 inch lines within the City limits. Water supplied to the Pee Dee No. 2 Mill Village runs through outdated one and one-half inch lines, while the East Rockingham area is very similar (both outside the City limits). For fire protection purposes, the downtown area should be completely served with at least 8 inch lines--some street segments have only 4 and 6 inch lines.

Richmond County Water System

Richmond County presently has a 105 mile treated water distribution system, which is interconnected with the Rockingham system. The Anson County regional water treatment plant provides Richmond County with 2.5 million gallons per day, and Rockingham provides an additional 150,000 gallons per day. At least once, in the summer of 1980, the County system was at its capacity and would have had a serious shortage problem had it not occurred on a weekend with no fires.

Issues

Rockingham must expand its water source, treatment, storage and distribution facilities to meet the expected future demand. The City proper should nearly double its water use over the next twenty years; and if Richmond County participates heavily in the City system, the

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facilities should be vastly expanded.

Sources. City Lake is a shallow impoundment which is rapidly filling in with sediment. Roberdel Lake has the capacity for future City needs, but larger raw water pumps and lines to the treatment plant would be needed to withdraw additional water. Also, the City does not now have means to regulate public access to this lake--as required by the State Environmental Protection Division. Other alternate potential sources of water are the Pee Dee River, ground water (wells), and Hinson Lake.

The Pee Dee River is a fantastic water source in terms of volume; and the Carolina Power and Light impoundment at Blewitt Falls already exists. Rockingham could draw water directly from the river and treat it, or purchase treated water from the existing Anson County "regional" treatment plant just across the river (if expanded). Drawing river water directly would necessitate either pumps and seven miles of raw water lines to the treatment plant, or the construction of a new treatment plant at the source. Purchase of treated water from Anson County requires the City to contract authority and responsibility to another agency. Also the Pee Dee River water quality is more variable than other water sources. It costs more to prevent potential polluting activities in the river which passes by several towns with high levels of municipal and industrial discharges.

Ground water, if available in sufficient quantity, may be the cleanest and least costly source. Not being as exposed to the environment and having already been filtered through the soil, treatment costs could be greatly reduced. Existing wells in Richmond County do not have sufficient flow for municipal needs; however, no wells in excess of 550 feet have been dug. Southern Pines tested the feasibility of a groundwater

source and found that at least six widely dispersed wells could meet their need (which is much less than Rockingham's). Changing geological features from the Sandhills to the piedmont in Richmond County may prove that groundwater could be a reliable source for raw water here.

Hinson Lake is directly downstream from City Lake on Falling Creek. This impoundment has over 50 acres of surface water, and is not prone to filling in because the City Lake dam traps sediment upstream. The City should investigate acquisition of Hinson Lake and resolve the sedimentation problem of City Lake. A more significant problem here, however, is that Falling Creek only has a 1.25 million gallons per day low flow.

Treatment and Storage. The treated water capacity for Rockingham needs to be increased to 3.5 million gallons per day by 1985, and to 5.0 million gallons per day by the year 2000. If an agreement can be reached to provide a major portion of the County water demand, a 10 to 15 million gallon capacity is needed.

The existing treatment plant can be expanded to 3.5 million gallons with minor alterations. And the treatment plant site could be expanded to accommodate up to 10.0 million gallons. If more than 10.0 million gallons are required, as if the County participates, a new site should be considered.

If needed, a new treatment plant should be located near the raw water source. A long raw line is inefficient because to serve customers near it, treated water must be returned to the same area (two lines needed instead of one). Also, to eliminate the need for pumps, a treatment plant should be located so that gravity can feed raw water from the source to the plant where possible.

Storage capacity and water pressure within the distribution system are closely related factors. The present overhead storage tanks allow no upward flexibility of the available pressure, which is limited by the height of tanks. To increase pressure, either higher tanks or a series of booster pumps is required.

An alternative is to store water at ground level and utilize pumps to create the necessary pressure. The advantage of this system is that pressure can be changed by modifying the pump and/or controls which is much less expensive than building new or raising existing, overhead tanks. Ground level storage requires less maintenance, and can be more aesthetically pleasing than overhead tanks.

The City should have a treated water storage capacity of approximately one-half its average daily consumption. This would require about 1.8 million gallons by 1985, and 2.5 million gallons by the year 2000. Larger volumes would be necessary if the City provides a substantial portion of the County's needs. Because of the extreme length of the County system, at least 100 pounds of pressure is needed to adequately serve both systems.

Distribution. The City presently has water service to all areas within its borders and several adjacent neighborhoods. The County provides water mains throughout most of the other developing areas which may be annexed in the future. Individual lines within new subdivisions are installed by the developer.

New water lines needed for the City over the next 20 years should only be replacements where existing pipe is inadequate. Undersized pipe are known to exist in the uptown area where a minimum size of eight inches is needed for fire protection.

Richmond County System. The Richmond County Water System should purchase a majority of its potable water from the expanded Rockingham facility. The County has no direct control over the Anson County regional plant, and is given low priority when area water needs are assessed. A new County treatment and storage facility would be costly and duplicative. Rockingham's existing system, on the other hand, is centrally located for the County, and already has many of the necessary facilities in place.

Recommendations

The City of Rockingham falls short of even its present water needs. Minor modifications can upgrade the treatment capacity, which would be effective for two to three years. For long running growth projections, however, this is inadequate and inefficient. The City should rather follow steps to meet the year 2000 demand in an efficient manner.

Short Range (5 Years):

1. Encourage Richmond County participation in Rockingham's treated water service.
2. Establish Roberdel Lake as the primary water source.
3. Study groundwater resources feasibility.
4. Increase treatment capacity to 3.5 mgd (5.0 mgd with County participation).
5. Increase storage capacity to 1.6 mg (2.0 mg with County participation).
6. Increase water pressure so that 65-70 pounds is available at all points on the system.
7. Replace distribution lines downtown to 8 inches along all streets.
8. Replace undersized distribution lines in surrounding mill villages.
9. Systematically replace vehicles and equipment as needed through capital improvements programming.
10. Initiate a water study program, to be reviewed every two years, to determine water system needs.

Long Range (20 Years):

1. Increase treatment capacity to 5.0 mgd (15 mgd with County participation).
2. Increase storage capacity to 2.0 mg (6 mg with County participation).
3. Continue No. 9 and No. 10 above.

Sanitary Sewerage

Sanitary sewerage service is available to all areas of Rockingham, as well as the Pee Dee, East Rockingham, Roberdel, and Midway areas outside the City limits. In 1980, average wastewater flow was 2.5 million gallons per day.

Demand

Future demand for sewage treatment is based on projected water usage. The City projects that it will use 3.5 million gallons of water per day (peak) by 1985 and 5.0 mgd by the year 2000. These projections are for the areas accessible to sanitary sewerage service. Generally the volume of sewage to be treated will be less than these figures because some areas will remain on septic tanks and a portion of the water does not return to the sewerage system (watering lawns, for example).

However, the City of Rockingham has a policy of providing sewage services in Richmond County outside its jurisdiction under certain circumstances to promote overall industrial development. Such industries may use County water and thus not included in the above projections.

As a rough estimate, this report assumes that such waste water will be a maximum of 20 percent of the City total water service volume, for 6.0 mgd total by the year 2000.

Treatment Plant

Rockingham constructed the existing sewage treatment plant in 1963 and doubled its capacity to 6.0 mgd in 1975. The plant is located off Old River Road approximately one-half mile from the City.

The plant uses an aerobic activated sludge treatment process with chlorination of the effluent before releasing it into Hitchcock Creek.

With an existing design capacity of 6.0 mgd, no major expansions should be needed to the year 2000. Minor modifications should be studied to increase the efficiency of the system. For instance, there is a primary settling tank which was used in the 1963 trickling filter treatment process and is basically non-functional in the present aerobic process. This could be utilized for a tertiary settling basin following the secondary aerobic treatment process with minimal changes.

The treatment system should naturally comply with all federal and state regulations. Local controls may be needed to assure that hazardous wastes are properly disposed of without overloading the treatment plant.

Collection System

The Rockingham sewage collection system is in reasonably good condition. Identified problems are included in the SSEs performed in conjunction with the 201 Study. Areas of surface and groundwater infiltration/inflow have been identified.

Sewage collection service must be provided within two years to any contiguous annexed area. The cost of this service must be carefully considered with any future annexation plans.

Stormwater surface runoff is separate from the sewerage system and through federal mandate must remain that way to avoid overloads. However, some types of runoff can lead to serious pollution problems--detergents

and oils from auto service facilities can quickly pollute a stream. Drainage controls should be established to assure that such pollution does not occur.

Recommendations

The City of Rockingham has a modern wastewater treatment facility with an adequate surplus capacity for the next twenty years. The City must take steps to keep the system operating efficiently.

Short Range (5 Years):

1. Continue plans to upgrade the sewage treatment and collection systems as per federal and state regulations.
2. Conduct periodic studies to prevent surface water inflow and groundwater infiltration into the sanitary system and take required action.
3. Replace undersized and deteriorated collection lines.
4. Systematically replace vehicles and equipment through capital improvements programming.

Long Range (20 Years):

1. Continue short range recommendations in a systematic manner.

Storm Drainage

The City of Rockingham suffers from inadequate and uncontrolled storm drainage. Where closed drains exist, many overflow during heavy rains. Natural drainage courses fill with debris, becoming health and safety hazards. Culverts under roads were often installed without proper consideration for the drainage area served, especially in relation to increased runoff resulting from future development.

Two streams, Falling and Hitchcock Creeks, flow through the City with

several tributaries. These streams have been designated as flood hazard areas by the Federal Insurance Administration, making low cost insurance available to property owners within the areas who flood-proof their structures. Flooding as traditionally defined has not been a problem in Rockingham, but standing water and overflowing storm drains are common after heavy rains.

Stormwater runoff in an urban area greatly increases surface water pollution downstream. Oils and detergents from automotive services uses, streets, fertilizers, and herbicides from grounds maintenance, litter and other organic matter from urban waste can rapidly deplete the oxygen supply of streams.

Recommendations

A master storm drainage management system is needed to adequately control pollution and reduce flooding hazards. Low priority and piecemeal solutions create an undue burden and potential liabilities for the City in the long run.

Short Range (5 Years):

1. Make review of drainage proposals a high priority when approving development plans (subdivision regulations).
2. Begin an organized and systematic program of drainage maintenance including:
 - storm drain clean-out,
 - improved street sweeping,
 - stream channel maintenance,
 - stream channel debris removed,
 - culvert cleaning, and
 - removal of sediment deposits.

3. Initiate a study to locate undersized drains/culverts.
4. Strictly enforce erosion and sedimentation regulations.
5. Study the feasibility of requiring retention and/or sanitary disposal of runoff which has a high pollution potential.
6. Begin a systematic improvement of inadequate storm drains through capital programming.

Long Range (20 Years):

1. Continue the above short range programs.
2. Study the feasibility of making storm drainage a public utility to manage the system and to be financed by property service charges.

Solid Waste

The collection and disposal of solid wastes is a significant element to all municipal governments. The City of Rockingham either provides or regulates the storage and collection of all garbage and trash, while they are disposed in the County sanitary landfill.

Collection

The Public Works Department provides twice-weekly pick up of domestic garbage with rear yard service. This service is available to both high and low density residential areas of the City. Commercial garbage service is the responsibility of private firms, normally via "green box" containers. Private collections may vary from once to six times weekly.

Yard refuse such as leaves and clippings are collected weekly in residential areas, and on an on-call basis for large amounts of refuse. Streets are vacuumed, swept, and watered periodically.

Disposal

The Rockingham solid waste materials are delivered to the Richmond

County Sanitary Landfill. Located south of town adjacent to the airport, the landfill is near capacity and is too near the runway to comply with Federal Aviation Administration guidelines.

Recommendations

The present solid waste collection system is extremely inefficient, labor intensive and costly. Many cities have greatly reduced operating costs with labor-saving devices and regulations. Rockingham should study these and implement techniques which are economically and politically feasible.

Since the City participates in use of the County Landfill, it should help the County locate a suitable new site.

Short Range (5 Years):

1. Study the feasibility of curb side residential garbage pick up and test on a trial basis.
2. Require new high density residential areas to use container garbage systems (zoning, subdivision regulations).
3. Study the feasibility of charging fees for solid waste collection so that generators of waste pay proportionately for this service.
4. Test the feasibility of leaf/grass clipping bags for curb side collection.
5. Help the County locate and acquire a suitable sanitary landfill site.
6. Systematically upgrade and replace vehicles and equipment through capital improvements programming.

Long Range (20 Years):

1. Study the feasibility of recycling solid wastes and mass burning of organic matter for energy generation.
2. Study the feasibility of creating a self-supporting solid waste collection system through service fees and recycling.
3. Continue capital improvements programming.

Street Maintenance

The City of Rockingham maintains 37.5 miles of streets within the city limits, while the State Department of Transportation maintains miles. Less than 2.0 miles of municipal streets are unpaved.

Many alley ways are dedicated to the public but are unused. No studies exist which identify all these alleys.

Most downtown streets have curbs and gutters, but this is not required of new development. Curbs have been proven to reduce street maintenance costs. The City has a policy to provide curbs, gutters, and sidewalks upon individual street petitions when abutting property owners agree to pay one-half the cost.

Street and sidewalk repair are presently done on a piecemeal basis as individual complaints or hazardous conditions arise. A large portion of local street maintenance costs are provided by State "Powell Bill" funds which is based on a formula using population and local street mileage as primary factors.

The state periodically upgrades roads under their jurisdiction. Minor maintenance projects are apparently conducted on an ad hoc basis, since only major projects are documented in district transportation plans.

The City has begun in 1981 a project to recycle old asphalt when upgrading existing paved streets. This demonstration appears to be very economical, and should be pursued.

Recommendations

The primary need in street maintenance is to be prepared and plan for major expenditures prior to emergency situations. This requires detailed surveys of existing conditions and capital programming.

Short Range (5 Years):

1. Pave all remaining dirt streets.
2. Identify all public alleys and determine if they should be maintained or closed.
3. Require curbs and gutters in all new developments.
4. Begin a program to systematically replace deteriorated sidewalks.
5. Identify streets requiring repaving (recycling) and put into the capital improvements program.
6. Require the state DOT to formally notify the City of all related street improvements under consideration.
7. Utilize capital improvements programming to systematically replace/upgrade vehicles and equipment.

Long Range (20 Years):

1. Continue programs initiated above so that the City can anticipate major streets expenditures.

Cemeteries

The City of Rockingham owns and operates three cemeteries. Two are located on Fayetteville Road and one on Rockingham Road. Eastside Cemetery on Fayetteville Road is the largest and has the most room for expansion.

Changing population characteristics indicate that by the year 2000 the City's percentage of elderly persons will increase from the present 10 percent to more than 15 percent. This increase means that ultimately a greater demand for cemetery space will be required.

Perpetual grounds care is an expensive concept. Grounds maintenance keeps a two person crew busy year round. Even so, only routine trimming and pruning has been possible. New and replacement plant materials are needed at all three locations to retain the garden-like setting.

As the cemeteries increase in size, it becomes more important to better identify burial lots. Path names, block and lot markers may be required. This is especially true now that low profile grave markers are mandatory.

Recommendations

Planned capital expenditures and additional burial space are the major long range concerns for the public cemeteries. Landscaping should become part of the capital program.

Short Range (5 Years):

1. Survey and map additional space at Northside Cemetery.
2. Begin a "landscaping rejuvenation program" at Eastside Cemetery.
3. Develop a method to better identify burial sites.
4. Repave driveways in annual phases.
5. Utilize capital improvements programming to finance the above project.

Long Range (20 Years):

1. Survey and acquire sufficient burial space to always be 20 years ahead the actual need.
2. Continue capital improvements programming to maintain grounds in pristine condition.

PUBLIC SAFETY

An essential and necessary element of community facilities is a city's public safety program. Above average public safety is a necessary ingredient for attracting new residents and industries. A quality fire protection program can reduce insurance rates. Civil preparedness must be an active element of the public safety program so that emergency situations have less severe impact.

Police Protection

The Rockingham Police Department includes a chief, two detectives, 15 patrol officers, four dispatchers, and one animal control officer. The Department has a communications center, six fully equipped patrol cars, and operates out of the municipal building. Communication and support assistance are mutually provided to the N. C. Highway Patrol, State Bureau of Investigation, Hamlet Police, and Richmond County Sheriff.

Presently the City police are two officers short of their need. The station facilities are cramped, and the communications center is out-moded.

By the year 2000, ten additional officers and four police cruisers will be needed to serve the projected population growth at the present standard of 2 officers for each 1,000 residents.

Recommendations

The manpower and physical facilities needs of the police department should be documented and anticipated in advance of potential emergency shortages. The existing high standards of this agency should be retained, and both personnel and facilities should increase proportionately with the population.

Short Range (5 Years):

1. Immediately eliminate the existing personnel shortages.
2. Upgrade the communications center.
3. Systematically replace vehicles and equipment, and schedule additional needs through capital improvements programming.

Long Range (20 Years):

1. Locate and acquire a new station facility.
2. Continue capital improvements programming to ascertain when additional personnel and equipment will be needed.

Fire Protection

One of the basic requirements for a growing city is a fully-staffed, well-trained and adequately equipped fire department. An adequate water system with properly spaced fire hydrants is also essential for effective fire fighting.

Fire protection in Rockingham is provided by the Rockingham Fire Department, a company composed of 32 firefighters divided among two stations. Of the 32, 15 are full-time firefighters. The remaining 17 are paid volunteers. The stations are as follows:

1. Fire Station #1 - Located at the corner of Roberdel Road and Leak Streets. The building was constructed in 1965.
2. Fire Station #2 - Located at the corner of Roberdel Road and the Old Aberdeen Road. This station was constructed in 1978.

The fire alarm system consists of telephones connected to the central fire alarm headquarters. The City has a class six fire rating and there are approximately 260 fire hydrants properly spaced throughout the City.

Firefighting equipment and vehicles are in good condition and adequate at present with one serious omission. The City needs a hook and ladder

truck to reach the taller downtown buildings, and over the roofs of larger structures such as a shopping center. The addition of this vehicle can have significant impact on Rockingham's physical development because height restrictions on new construction (now 35 feet) could be increased.

It is unlikely that an additional fire station is needed. Rockingham encompasses a compact area now, and future growth is expected at higher densities without being as spread out as development of the 1960s and 1970s. Movement of vehicles to and from the existing Fire Station #1 could be more efficient with street and land improvements, and the station could be enlarged if necessary. Future growth towards Hamlet could at some time make feasible a new station between there and Rockingham.

Fire protection projections for Rockingham depend heavily on the future actions of Richmond County and volunteer fire departments within the County. In the past, Rockingham fire service has been available to non-city residents for a \$300.00 per call fee. Volunteer departments with districts began to form in the developed area surrounding Rockingham during the 1970s. By mutual agreement, the City does not respond to fire calls within another district unless that department requests assistance. The Northside Volunteer Department is the newest fire unit, adjacent to the City's northern boundary.

The City fire department will serve whatever area is agreed upon by the City, County, and individual fire district organizations. From an ideal planning standpoint, the City should service all land within its borders and within the extraterritorial planning jurisdiction. The planning jurisdiction is the area being considered for annexation, where City land use controls are enforced, where often City water is provided, and the fire stations are centrally located to serve this area.

The ultimate goal for the City of Rockingham is to make certain that all areas of Richmond County receive the best fire protection possible through a cooperative effort. However, the decision on what area the City department serves has an impact on future firefighting capital needs. An additional pumper truck is required if a large unincorporated area is under the City jurisdiction. If the City only serves municipal properties, Fire Station #2 is inefficient because it is situated at the City boundary.

City fire protection needs over the next 20 years is more a function of land area and properties served than total population. If the population doubles, for instance, the fire department personnel need not necessarily double. By the year 2000 the City forecasts the need for approximately 6 to 8 additional firefighters.

Recommendations

After exact service areas are delineated, the Rockingham Fire Department can more accurately predict and plan for future facility needs through capital improvements programming.

Short Range (5 Years):

1. Delineate jurisdictional areas for all area fire departments.
2. Acquire a hook and ladder facility.
3. Study feasibility of closing Fire Station #2.
4. Study improvements/accessibility to Fire Station #1.
5. Plan for the need and financing of additional needs through capital improvements programming.

Long Range (20 Years):

1. Study the feasibility of a new station between Rockingham and Hamlet, perhaps supported by both cities.

2. Systematically increase the firefighting force as the service area expands.
3. Continue to replace/add equipment through capital improvements programming.

Civil Preparedness

In the event of national emergency, every citizen in Rockingham should have access to a fallout/disaster shelter in a school or other facility near his/her home or in a public shelter in the uptown area. These shelters should be funded by the City, County, State, and Federal governments.

At the present time, there is no Rockingham Civil Preparedness Unit. Few of the City's buildings are structurally able to serve as fallout shelters. No suitably trained staff is available on the local level to assist residents in cases of local or national emergencies or disasters, although the County is working on civil preparedness.

Emergency and disaster planning/preparedness is perhaps more necessary in case of a local emergency. Earthquakes, floods, tornadoes, blizzards, ice storms, and similar calamities are possible in Rockingham. Such disasters could leave vital public services at a standstill. Contingency strategies should be devised, tested, and publicized for such events.

Recommendations

The City should be prepared and equipped for emergency situations through capital programming and contingency planning.

Short Range (5 years):

1. Formulate and test emergency preparedness plans to cover all anticipated situations, in conjunction with Richmond County.
2. Identify and equip emergency shelters, including fallout shelters.

3. Utilize capital improvements programming to finance these activities.

Long Range (20 Years):

1. Continue short range strategies. Update plans and upgrade facilities as new technologies become available.

After the long range planning period, the same land, structures,

and people will be available.

Community facilities will be maintained and upgraded.

Additional open space, parks, and new ballparks, along with
improved recreational facilities, are the County's main concern in
community parks in East Buckingham. New neighborhood parks include one block
off Street (Pleasant Park), which is owned by a non-profit organization.

Buckingham is not prepared to have another complete community park.
During this 20 year planning period, neighborhood parks, which are
existing structures or additions, are needed, especially in densely developed
areas.

Community facilities are difficult and expensive to maintain.
In addition to City-owned and leased parks, the City may consider
leasing neighborhood parks as they not only help with their financial
problems but also help to build up their individual neighborhoods. The neighborhood would then have
a place to gather and开展各种社区活动。 Provision of neighborhood
parks in open space should be a priority consideration when new areas begin
to be developed. Indication of land for parks can be made part of a
new zoning or subdivision plan.

Financial Summary

Buckingham has two alternative sources for financial support for the
the Great Falls MTA: sales and a tax increment financing.

extensive bands around the primary pulmonary arteries. Intimal thickening is

commonly absent but may result in significant obstruction to the pulmonary circulation. The differential diagnosis is the same as for the primary pulmonary hypertension.

RECREATION

The City of Rockingham provides recreation facilities in cooperation with the Richmond County Parks and Recreation Department. Through this arrangement the City provides capital outlay items (land, structures, etc.) while the County provides programs and personnel.

Rockingham has three recreational areas: two complete community facilities (one with indoor gymnasium), and one ballpark. Within the extraterritorial planning jurisdiction, the County is constructing a community park in East Rockingham. One neighborhood park exists on Hood Street (Palisades Park), which is owned by a non-profit organization.

Rockingham is not projected to need another complete community park during this 20 year planning period. Neighborhood parks, within safe walking distance of residences, are needed, especially in densely developed areas.

Neighborhood facilities are difficult and expensive to maintain. As an alternative to City owned and operated parks, the City may appropriate funds to neighborhood groups so they may determine what facilities are best suited to their individual needs. The neighborhood would then have maintenance and oversight responsibilities. Provision of neighborhood recreation space should be a primary consideration when new areas become urbanized. Dedication of land for recreation can be made part of a developer's subdivision plat.

Historic Resources

Rockingham has two historic resources with future recreation potential: the Great Falls Mill ruins and the residential historic district. The

Great Falls Mill has potential to become a state historical site, being the location of North Carolina's fifth oldest textile mill. Creating a recreation and interpretive center here could have a great tourism attraction for the City.

The Historic Residential District is a valuable asset to the community. Public recognition of this resource through support for an information center/museum could greatly enhance the livability of close in neighborhoods, and benefit the overall quality of life.

Both of these projects have recreational merit, and each can benefit the entire City. Since they are expensive proposals, detailed feasibility studies should be conducted in order to determine long range expenditures and benefits.

Bikeways

An increasing number of people use bicycles for recreation and transportation. Except for low volume traffic local streets, there are no safe areas to ride bicycles in the City. It is especially hazardous for children riding to school and recreation areas.

A bikeway system can be exorbitantly expensive. If phased into the streets improvement program, however, the cost can be reduced and spread over several years.

Recommendations

The City shall not expend any funds to expand recreational facilities until sufficient data are available concerning total cost and community needs. Then economically feasible and usable facilities can be scheduled through capital improvements programming.

Short Range (5 Years):

1. Conduct neighborhood studies to determine recreational needs.
2. Provide funds to help establish one neighborhood park every two years until the determined need is met.
3. Determine economic feasibility of creating a recreational interpretive center at the Great Falls Mill.
4. Pursue the establishment of an historic district information center/museum.
5. Develop a bikeways plan.
6. Construct/designate bikeways with the highest priority being where the safety hazard is greatest.

Long Range (20 Years):

1. Help provide a complete system of neighborhood parks, located so that all citizens can walk to a recreation area.
2. Implement plans for an interpretive center at Great Falls Mill.
3. Complete a Rockingham bikeways system.

OTHER COMMUNITY FACILITIES

Municipal Building

The Rockingham Municipal Building is a brick structure on the corner of Lawrence and Franklin Streets. Constructed in 1956, this two-story structure contains approximately 6,000 square feet. The first floor houses the Police Department, the Water Billing Department, the City Clerk's Office and the Tax Collector's Office. The second floor serves as the Administrative Offices, Planning and Code Enforcement Offices, Mayor's Office, and contains the City Council Chambers.

The Council Chambers and entire second floor are inaccessible to the handicapped. The building has been enlarged and modified several times since its original construction, and is now such a maze of inefficient public office space that another major remodeling is needed. Any major work on the structure must by federal law also make it totally accessible: an elevator would be necessary.

Considering the cost of installing an elevator, and the costs of remodeling, a new municipal building may be more practical. The feasibility of acquiring a new structure should be studied soon, because it is an intolerable situation when Council meetings are inaccessible to the general public.

Library

The Rockingham branch of the Sandhills Regional Library System is located in a 1940s structure which is totally inadequate for efficient operation. Land is available for a new facility, and some monies from foundations, state grants, and private donations have been received.

Total costs and design work on the library project should be finalized soon so that the City and other parties know what needs to be done.

Recommendations

Short Range (5 Years):

1. Locate suitable site for a new municipal building.
2. Begin design work on a new municipal building after determining future space needs.
3. Acquire clear title to a new library site.
4. Complete design plans for a new library.
5. Initiate fund raising measures for these facilities.

Long Range (20 Years):

1. Construct or renovate and open a new municipal building.
2. Construct and open a new library facility.

IMPLEMENTATION

The Community Facilities Plan for Rockingham is intended to provide guidance in the provision of services to the City. As Rockingham increases in both area and population, the task of providing increased facilities and services will require an expansion of local government.

In order to provide the increased facilities and services necessary to meet the needs of a growing population, the City should implement the recommendations enumerated in this Community Facilities Plan. In order to implement the Plan, several steps must be taken.

The first step needed is the prioritization of all proposed projects so that the City's managerial and fiscal resources can be first applied in those areas where the need is the greatest. A second step, and perhaps the most important, is a fiscal review and analysis of potential project funding sources. This will be presented in the Proposed Capital Improvements Program and Capital Budget.

The Capital Improvements Program should be divided into two main sectors. The first section would specify project priorities as worked out by the local leadership. The second consists of an analysis of the City's fiscal resources, with a complete study of where the funds will be secured for both every-day operations and the needed improvements. Also, a five year capital program can be designed, which, with annual adjustments, would enable the City to retain a solid financial footing and still provide the necessary improvements for a growing community.

ENVIRONMENTAL ASSESSMENT STATEMENT

This report analyzes the community facility needs and major public capital expenditures over a twenty year period for Rockingham, North Carolina.

All of the proposed project are for capital improvements, and many involve construction and reconstruction (such as streets, sidewalks, drainage improvements). In all instances of construction work, the environment is effected to one degree or another and resources used for that construction become committed. However, the capital items listed in this report are necessary to meet the future needs of the City of Rockingham. In all probability they will occur with or without a Community Facilities Plan. With this plan, each project will be implemented in an efficient manner with minimal duplication. The plan also helps to assure that the effects on the environment and the use of resources are kept to a minimum since each project is planned to meet specific needs of the community.

Adverse Environmental Effects

Adverse environmental effects associated with this plan are basically limited to site preparation prior to construction, and the effects associated with construction. These are temporary in nature. Potential long range effects would only entail erosion-sedimentation problems. Extreme care will be taken to control such erosions, in keeping with state and local regulations.

Project Alternatives

The primary alternative to the proposed projects in this plan is to continue using existing facilities as they exist today or to expand services in an ad hoc uncoordinated manner. The purpose of these recommendation is to replace equipment which no longer function properly after the anticipated replacement date and to extend facilities which are, or will be, over-used without proper relief. In the event improvements are not made as proposed. hazards could result to the environment and possibly to the public. Barring unforseen events, the projects are proposed will meet the City's needs as efficiently as possible. Any alternatives would reduce the City's responsiveness to the public need.

Relationship Between Long and Short Term Uses And the Maintenance of Long Term Productivity

Some proposed projects may have minimum short range adverse impacts on the environment (during construction). However, street construction and water and sewer improvements will provide long range improvements to productivity.

Applicable Federal, State, and Local Environmental Controls

Since some of the proposed projects will not be accomplished for several years, it is impossible to state federal, state, and local environmental controls that will be applicable to them. Those which will be accomplished within the next year and for which the environment is affected will comply to acts pertaining to clean air and water and applicable other federal, state and local controls regarding the environment.

In all cases proper controls will be used and applicable regulations will be followed to mitigate any impact that the proposed projects may have on the environment. These controls will be those most suited to each project. Actual control measures will be dictated by the plans and designs of each project.

At this time no problems and objectives have been raised by other federal, state and local agencies. Should problems and objectives be raised at a later date when projects come to maturity, they will be analyzed and cared for at that time.

The Community Facilities Plan analyzes major public service and improvement needs for the City of Rockfishan, North Carolina through the year 2000. Expansions of water, sewerage, and drainage systems are recommended, as well as new recreation facilities, a new library, and City Hall.

A recently completed architectural and historic resources survey of the City indicates that none of these proposed projects will impact sites potentially eligible for the National Register of Historic Places.

HISTORIC PRESERVATION ASSESSMENT

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